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file: Firing Device, A.C. Delay MK II

18 March 1957

Dear Joe,

Enclosed is Progress Report on the Mark 3 Time Delay which, according to your instructions, sums up the work interrupted due to Don's accident.

We have continued our effort and hope to bring this work to a satisfactory solution within the allotted time.

Regards,

25X1 [redacted]

25X1 [redacted]

[redacted]

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PROGRESS REPORT
OF
MK 3 TIME DELAY

March 1957

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PROGRESS REPORT OF MK 3 TIME DELAY

FOR

PERIOD ENDING FEBRUARY 1957

Because of an injury to the project engineer for this task, reports were not written as would normally be expected. Therefore, this progress report summarizes work from 1 July 1956 to 1 March 1957.

In the last report, it was stated that the Western No. 3 Primer could be initiated satisfactorily in this unit. This primer is expected to withstand the normal surveillance requirements provided that it is "potted" into the primer holder. Although no difficulty should be expected in the initiation of the Corps of Engineers special non-electric blasting cap by this device, using the Western No. 3 Primer, it was considered necessary to ascertain by experiment whether or not satisfactory firing of this blasting cap actually takes place. Ten tests were conducted using the Mk3 Delay incorporating the Western No. 3 primer to initiate the Corps of Engineers blasting cap. The blasting cap was fired in all ten tests.

Using a 25 pound spring, a failure of one striker pin occurred causing premature activation of the unit, even though a stress analysis of the unit showed that the pin had a satisfactory safety factor. However, it was decided that two changes would be made to prevent such failures. The first was changing the spring to one having a compression of 13 pounds, but having

a greater travel. This greater travel allows an even greater net compression than obtained using the 25 lb. spring after the head of the striker pin has pulled through the timing disk. The second design change is changing the actual firing knob from the end of the striker body and placing it on the end of the striker pin. The pin is, therefore, lengthened and screwed through the striker body. With this new system, if the threads of the striker pin were stripped, the firing knob would not contact the primer and the unit obviously could not fire.

Using the new spring, 90 tests were conducted to determine whether or not the unit would reliably initiate the No. 3 Western Primer. No failures occurred in any of these tests. These first 90 tests were conducted with the unit screwed into a block of wood. To further test the unit, an additional 10 tests were performed in a similar manner except that the unit was suspended from the ceiling by means of a rubber band instead of screwing it into a block of wood. No failures occurred in these tests.

Future Work Planned

1. Timing tests at 41°, 77° and 104°F will be conducted upon the unit.
2. The task will be terminated.

FINANCIAL STATUS

Total Amount of Contract	$11,652.00
Expenditure through 31 January 1957	8,330.19
Unexpended Balance	3,321.81
Expiration Date 2 May 1957	